Claims

1. A granulator device (101) for the treatment of powdered products comprising at least one closed container (102) forming a chamber (103) for treatment of the products; filter means (104, 105) projecting into the treatment chamber (103), the filter means (104, 105) comprising at least one multi-layer filtering wall (105) through which at least one fluid current can pass; and powder removing means (106; 107, 108, 109, 110) designed to diffuse at least one service fluid directed towards at least the filtering wall (105); the device (101) being characterised in that the powder removing means (106; 107, 108, 109, 110) comprise at least first diffuser nozzles (107) and at least second diffuser nozzles (108) to diffuse the service fluid so as to free the filtering wall (105) of the powders trapped in it; there also being means (140, 142, 147) for supporting and driving the filter means (104, 105) which can change the angle of the filter means (104, 105) from a first operating position, in which at least the first nozzles (107) act on the filtering wall (105), to a second operating position in which the filter means (104) are set at an angle to the first operating position to allow at least the second diffuser nozzles (108) to operate on the filtering wall (105).

2. The device according to claim 1, characterised in that the powder removing means (106; 107, 108, 109, 110) also comprise at least one arm (110) mobile about and relative to the filtering wall (105) and on which the first diffuser nozzles (107) are fitted in such a way that they gradually cover the length of the surface of the filtering wall (105), as the arm (110) moves, to diffuse the service fluid.

3. The device according to claim 2, characterised in that the arm (110) is rotatably mounted about an axis of rotation (114) integral with the filtering wall (105).

4. The device according to claim 2 or 3, characterised in that the filtering wall (105) belongs to a filter (104) which has the shape of a completely hollow solid; the arm (110) being housed inside the filtering wall (105).

5. The device according to claims 3 and 4, characterised in that the first nozzles (107) supported by the arm (110) are positioned opposite a generatrix (117) from which the shape of the filtering wall (105) can be considered generated after rotation of the generatrix (117) about the axis of symmetry (114).

6. The device according to claim 4, characterised in that the filter (104) has a toroidal shape with an internal hollow (124); the arm (110) being housed in the hollow (124) and having a shape which matches the meridian profile of the toroidal shape.

7. The device according to any of the claims from 2 to 6, characterised in that the drive means (140, 142, 147) comprise coupling means (140) formed by opposite cranks (143) extending radially from a drive shaft (115) which moves the arm (110) and from a driven shaft (144) integral with the arm (110); the cranks (143) being able to connect to and disconnect from one another after relative movements by the drive shaft (115) and the driven shaft (144) in the two opposite directions of their shared axis of rotation (114).

8. The device according to claim 7, characterised in that it comprises means (141) for conveying the service fluid to the first nozzles (107) with hydraulic connecting means (142) that are part of the drive means (140, 142, 147); the connecting means (142) comprising a first tubular pipe (130) in the drive shaft (115) of the arm (110), and a second tubular pipe (131) in the driven shaft (144).

9. The device according to claims 4 and 7 or 8, characterised in that it comprises means (147) for supporting the filter (104), the supporting means (147) being able to rotate about an axis (148)

transversal to the axis of rotation (114) of the arm (110), allowing the change in the angle of the filter (104).

10. The device according to claim 9, characterised in that the supporting means (147) consist of a fork (149) which rotates about a fixed pin (150), the latter supported by a wall (118) of the container (102); the fork (149) having tines (151) between which the filter (104) is inserted and constrained.

11. The device according to any of the foregoing claims from 1 to 10, characterised in that the powder removing means (106; 107, 108, 109, 110) also comprise third diffuser nozzles (109) supported in such a way that they are stationary by a container (102) wall (118).

12. The device according to any of the foregoing claims from 1 to 11, characterised in that the first nozzles (107) are supplied with a first service fluid which is a pressurised gaseous fluid.

13. The device according to any of the foregoing claims from 1 to 12, characterised in that at least the second nozzles (108) are supplied with a service fluid in the wet state.

14. The device according to claims 11 and 12 or 13, characterised in that the third nozzles (109) are supplied with a service fluid in the wet state.